Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Implementation of Section 255 of the Telecommunications Act of 1996	)	
	)	WT Docket No. 96-198
Access to Telecommunications Services, Telecommunications Equipment, and Customer Premises Equipment By Persons with Disabilities	)	

REPLY COMMENTS OF NETSCAPE COMMUNICATIONS CORPORATION

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SUMMARY

A process-oriented approach is crucial to meeting the challenge of disability access for modern telecommunications services, telecommunications equipment and CPE. The Access Board's Telecommunications Access Advisory Committee ("TAAC"), of which Netscape is now a member, is just the beginning of the concerted effort required to make communications services and equipment as accessible to persons with disabilities as they are to non-disabled Americans. While Internet services and software are information services under the 1996 Act, and thus not technically subject to Section 255, Netscape shares the commitment of the broader Internet community, including the World Wide Web Consortium ("W3C") and the open Internet standards organizations, to enhancing the accessibility of the Internet for people with disabilities.

These reply comments focus on four principal issues. First, Netscape addresses the relationship between market innovation and government guidelines for accessibility. We conclude that although market forces should be significant in meeting the needs of disabled consumers, they cannot alone be relied upon to achieve accessible products and universal design. The Commission should reject the recommendation of some comments that the marketplace "will determine whether the needs of disabled individuals are being met through innovations in the accessibility area."

Second, we respond to several commenters who assert that the definition of CPE for purposes of Section 255 cannot include software used for telecommunications. Although the language of Section 255 and the rapid pace of technological change make mandatory FCC technical specifications for accessibility improper, a blanket exclusion of all software, regardless of its functionalities, from the scope of Section 255 would risk

excluding some of the more significant means of modern communications from the accessibility guarantees of the 1996 Act. The Commission does not and cannot regulate the software industry. Nonetheless, the hardware and software telecommunications capabilities of consumer equipment, whether personal computers or consumer electronics, should be subject to comparable accessibility obligations under Section 255.

Third, disability access is one of three pillars of a universal communications infrastructure, in which all people, regardless of economic status, physical limitations or geographic location, can participate fully in the global medium of the Internet. Universal service, universal design and universal access are all related, and the Commission's decisions under Section 255 should make clear the linkage between each of these three aspects of universality. These same principles are already being implemented in the consensus, open standards environment of the Internet community. By promoting universal design, universal service and universal access for telecommunications services *and* the Internet, the Commission will advance the interests of people with disabilities in the broader context of a truly "universal," global telecommunications and information system.

Finally, Netscape cannot agree with those commenters who have advocated a case-by-case approach to disposition of accessibility complaints. Nor do we concur with the view that the ADA has led to "confusion" and "delay" in achieving accessibility, such that the Commission "should hesitate" before adopting the ADA's definition of "readily achievable." To the contrary, we agree with a wide range of commenters—from the National Association of the Deaf to the American Foundation for the Blind and others—who have urged the Commission to *use process-oriented*

guidelines that encourage early identification of accessibility solutions instead of more costly and contentious disputes over retrofitting of inaccessible equipment and services.

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Netscape Communications Corporation ("Netscape"), by its attorneys, respectfully submits these reply comments in connection with the Commission's Notice of Inquiry ("NOI")[1] regarding implementation of Section 255 of the Telecommunications Act of 1996.[2]

INTRODUCTION

Modeled largely on the Americans with Disabilities Act ("ADA"),[3] Section 255 is a landmark provision that for the first time establishes an enforceable right by persons with disabilities for accessible telecommunications services, telecommunications equipment and customer premises equipment ("CPE"). Achieving the 1996 Act's goal of

[1] *Implementation of Section 255 of the Telecommunications Act of 1996,* Notice of Inquiry, WT Docket No. 96-198, FCC 96-382 (released Sept. 19, 1996).

[2] 47 U.S.C. § 255.

[3] 42 U.S.C. § 12101 *et seq.*

inclusiveness and overcoming accessibility barriers in the rapidly changing environment of information technologies will require a coordinated effort by the telecommunications industry, equipment and software manufacturers, the disability community and government. This process has begun with the appointment by the Architectural and Transportation Barriers Compliance Board ("Access Board") of a Telecommunications Access Advisory Committee ("TAAC"), of which Netscape is now a member, but that is just the beginning of the concerted effort required to make communications services and equipment as accessible to persons with disabilities as they are to non-disabled Americans.

In light of its leadership role in developing software for accessing the rich information resources available on the Internet—both globally, through the Internet's "network of networks," and within rapidly expanding corporate and institutional intranets[4]—Netscape believes that the Commission's vision in this proceeding cannot be limited to traditional voice, TTY and related telecommunications services. Clearly, persons with disabilities still face unnecessary barriers in using many existing services offered by telecommunications carriers and CPE providers, from voicemail and directory services to Caller ID and digital wireless CPE, and numerous others. But as the importance of the Internet continues to increase exponentially, accessibility to this new medium of communication becomes increasingly important as a means of

[4] The increasingly important role of intranets in corporate, institutional and other organizations is discussed in detail on Netscape's World Wide Web site <http://home.netscape.com/comprod/at_work.html>.

providing persons with disabilities equal opportunity in the classroom, the workplace and society in general.

Ideally, the Internet and the World Wide Web should be as accessible to people with disabilities as "browsing" software has made the Web accessible to the general public. In pursuing this ideal, Netscape has begun reaching out to disability advocates, consumers and consultants to better understand the accessibility barriers on the Internet, and is committed to development of a universal design policy for the company's Internet and intranet software.[5] This process-oriented approach, Netscape believes, is crucial to meeting the challenge of disability access by creating a corporate culture of universality and by addressing accessibility issues in the early stages of product design. There are many difficult technical challenges in making the Internet truly accessible for persons with disabilities, and Netscape looks forward to working cooperatively with the disability community on overcoming these barriers.

Against this background, these reply comments focus on four principal issues. First, Netscape addresses the relationship between market innovation and government guidelines for accessibility. We conclude that although market forces should be significant in meeting the needs of disabled consumers, they cannot alone be relied upon to achieve accessible products and universal design. The Commission should reject Microsoft's ambiguous recommendation that it "adopt a presumption that the marketplace will determine whether the needs of disabled individuals are being met

[5] As noted below, many of the accessibility issues related to the Internet and the World Wide Web arise from the consensus, open standards on which the Internet is based, and are beyond the control of any one company. Thus, the larger Internet community is focusing on accessibility issues for persons with disabilities, through activities at the World Wide Web Consortium <http://www.w3.orgpub
(Footnote continued on next page)

through innovations in the accessibility area."[6] Second, we respond to several commenters, including Microsoft, who assert that the definition of CPE for purposes of Section 255 cannot include software *used for telecommunications*.[7] Because rapid technological change is blurring the distinctions between services, equipment and software, this position could exclude some of the more significant means of modern communications from the accessibility guarantees of the 1996 Act. Although the language of Section 255 and the need to encourage technological innovation make mandatory FCC technical specifications for accessibility improper, a blanket exclusion of all software, regardless of its functionalities, from the scope of Section 255 would contradict the policies of the 1996 Act.

Third, Netscape discusses the role of universal design and accessibility in the Commission's overall telecommunications policies. In our view, disability access is one of three pillars of a universal communications infrastructure, in which all people, regardless of economic status, physical limitations or geographic location, can participate fully in the global medium of the Internet. Universal service, universal design and universal access are all related, and the Commission's decisions under Section 255 should make clear the linkage between each of these three aspects of universality. While Internet and World Wide Web software support enhanced "information services," not "telecommunications services" within the scope of Section

/WWW/Disabilities/> and the upcoming Sixth International World Wide Web Conference in April 1997 < http://www6conf.slac.stanford.edu/>. *See* Section II below.

[6] Microsoft Comments at 23.

[7] *Id.* at 10-11.

255, these same principles are already being implemented in the consensus, open standards environment of the Internet community.

Finally, these reply comments address the procedural mechanisms for Commission enforcement of Section 255. Netscape cannot agree with those commenters who have advocated a case-by-case approach to disposition of accessibility complaints. Nor do we concur with Microsoft's view that the ADA has led to "confusion" and "delay" in achieving accessibility, such that the Commission "should hesitate" before adopting the ADA's definition of "readily achievable."[8] To the contrary, we agree with a wide range of commenters—from the National Association of the Deaf ("NAD"), to the American Foundation for the Blind ("AFB") and others—who have urged the Commission to *use process-oriented guidelines* that encourage early identification of accessibility solutions instead of more costly and contentious disputes over retrofitting of inaccessible equipment and services. Mandatory technical standards, on the other hand, would impede the creativity and ingenuity of product design engineers, and ultimately serve the interests of neither disabled consumers nor manufacturers.

I. MARKETPLACE INNOVATION DOES NOT DISPLACE THE NEED FOR COMMISSION GUIDELINES ON TELECOMMUNICATIONS ACCESSIBILITY

Many commenters have observed the substantial differences between the ADA's focus on physical accessibility barriers and the far more technology-oriented issues facing carriers and manufacturers under Section 255.[9] There is a clear consensus among the comments that the rapidly changing technology of communications is a positive force for disability access, because the shorter product cycles and more constant service

[8] Microsoft Comments at 21-22.

evolution in the information technology marketplace allow many more opportunities for building accessibility into the product design process itself.[10] This is particularly true on the Internet, where technological progress occurs at an accelerated pace, permitting greater flexibility for manufacturers than in more traditional communications markets.

Forward-looking telecommunications companies should also recognize that addressing universal design considerations is a positive step for their own businesses. Not only are disabled consumers a large and economically significant market, but corporate customers will increasingly be called on to eliminate barriers to workplace participation created by the information and communications technologies they choose to deploy. Moreover, product features originally intended for disability access frequently prove useful for and marketable to other consumers, increasing the overall feature-richness and value of communications products. There is good reason to believe, therefore, that market forces will provide incentives for private industry to develop telecommunications services, equipment and CPE that meet the needs of people with disabilities and eliminate barriers to their full and active participation in the economy.

The Commission should plainly attempt to provide flexibility for service providers and manufacturers in meeting the accessibility mandates of Section 255. It would be foolish for the Commission, given the torrid pace of technological innovation, to seek to mandate today how carriers and manufacturers should design accessibility

[9] *E.g.*, NAD Comments at 23; Pacific Telesis Comments at ii.
[10] *E.g.*, NAD Comments at 22; Motorola Comments at 18-19.

into future telecommunications services and products. Indeed, because accessibility in communications is relatively new, for a number of services, including the World Wide Web, even a basic consensus on how to approach accessible design has yet to develop. The requirements of Section 255 clearly need to be implemented with an eye toward *harnessing* technological innovation—making it a tool for improving accessibility—rather than overriding innovation with mandatory technical standards.[11]

Marketplace innovation alone, however, does not eliminate the need for Commission action on telecommunications accessibility. Indeed, market-driven innovations, such as the popular Graphical User Interface ("GUI") for computers, can sometimes inadvertently increase accessibility barriers for people with disabilities. Several comments suggest that the Commission should avoid applying any accessibility guidelines, and that FCC guidelines would be beyond the lawful scope of Section 255.[12] For its part, Microsoft argues that the Commission should establish a "presumption"

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[11] The Internet is a perfect example of how non-governmental, consensus standards can create both seamless interoperability and significant social and economic benefits without any government mandates. *See Federal-State Joint Board on Universal Service,* Recommended Decision, CC Docket No. 96-45, FCC 96-J3, ¶ 457 (released Nov. 8, 1996) (Internet is "an unregulated, non-governmental and self-administered network for global information exchange")("Joint Board Recommended Decision"). All of the principal Internet protocols and technical standards are developed and administered by decentralized, non-governmental standards bodies, including the Internet Engineering Task Force <http://www.ietf.org>, the Internet Assigned Number Authority <http://www.iana/org/iana> and other groups affiliated with the Internet Society <http://www.isoc. org>. The Internet itself is governed by the user and engineering community, not national or international governments. In the telecommunications field, a similar approach to technical standards has evolved at the FCC, under which most technical specifications for telecommunications equipment and services—from Signaling System 7 to number portability and beyond—are the product of private, voluntary industry standards organizations, not the Commission.

[12] *E.g.*, Southwestern Bell Comments at 8.

that the market is resolving disability access, and only intervene in the event of a "market failure."[13]

These comments are invalid. Had the marketplace functioned well enough to produce accessibility for persons with disabilities without government intervention, there would have been no need for Congress to enact Section 255 in the first place. Microsoft maintains that "[t]he marketplace already provides an adequate incentive for providing accessible products,"[14] but fails to recognize that its own computer operating system products, including Windows 95, incorporate barriers to disability access that remain unresolved today. Indeed, for some people with disabilities, particularly people who are blind, Microsoft's dominance of the computer software market—in particular its commercialization of the GUI—have actually *created* accessibility barriers that did not exist earlier.[15]

The point here is not to belittle Microsoft's significant efforts to overcome accessibility limitations in its software and to internalize universal design principles in its product development process.[16] These are both commendable and laudatory. Nor

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[13] Microsoft Comments at 23. The Cellular Telecommunications Industry Association joins in this argument, maintaining that "[d]irect intervention should be limited to those cases of actual market failure." CTIA Comments at 3.

[14] Microsoft Comments at 23.

[15] *See* AFB Comments at 4 & App. A; CCD Telecomm Comments at 5. The very prevalence of the GUI is clearly a market-driven development, not a "market failure," even though the same ease of computer use created by software GUIs and multimedia products has also made accessibility for some disabled people more difficult, and in turn reduced the general commercial availability of "text-only" products more accessible for disabled individuals. Moreover, the GUI and is a perfect example of how technology innovations that benefit one group of people with disabilities can actually harm another. Since it involves mouse interaction with the computer rather than exclusively keyboard access, the GUI is a marked improvement for people with some mobility and dexterity disabilities. On the other hand, mouse interfaces cannot be used by people who are blind or vision-impaired, because they have no easy means of directing the mouse cursor to the proper position on the computer monitor.

[16] Microsoft Comments at 21.

does Netscape pretend that its products, based on open Internet standards, have fully addressed accessibility concerns of people with disabilities; there is much work remaining to be done, and in some respects Netscape, like other young (not yet three-year old) companies, is still very new to the world of universal design.

Rather, the point is that markets alone cannot be expected to function efficiently to meet the accessibility needs of disabled consumers. One merely has to review the history of closed captioning, discussed by several commenters,[17] to realize that some government action is required and can, in effect, "jump start" a market trend toward universal design. This action need not take the form of intrusive regulation, but instead can be consistent with the cooperative efforts now underway to move toward accessibility in the consensus-driven standards process. At the same time, the Commission has the opportunity, and Netscape thinks the obligation, to promote accessibility and universal access in the United States and internationally, in order to make the promise of a Global Information Infrastructure a reality.[18]

II. SOFTWARE SHOULD BE CLASSIFIED AS CPE FOR SECTION 255 PURPOSES WHEN IT PROVIDES TELECOMMUNICATIONS FUNCTIONALITIES

Although it sought comment on how to define CPE for purposes of Section 255, the NOI did not specifically request comment on whether, and if so to what extent, software should be included in the definition of CPE. Netscape agrees with Pacific Telesis that CPE is perhaps the most important factor in ensuring accessibility for

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[17] NAD Comments at 27; CCD Telecomm Comments at 10; AFB Comments at 10. These comments point out that, after the passage of federal legislation requiring all television receivers larger than 13 inches to include closed captioning capabilities, the effective cost of closed captioning decoders dropped from $300 to under $1 and is now routinely included in the price of all televisions sold, to both disabled and able-bodied consumers.

[18] *See* Section III below

people with disabilities.[19] In today's telecommunications environment, more intelligence is being designed into the equipment with which end users interface with the network, rather than the network itself.

The future boundaries of software and hardware are impossible to predict in light of the pace of technological progress in telecommunications. It is likely, however, that two trends—the decentralization of communications intelligence and the separation of applications from transport[20]—will increasingly characterize telecommunications over the next decade. We therefore agree with AFB and the Trace Research & Development Center ("TRACE") that computers, and software, should be classified as CPE under Section 255 *with respect to their telecommunications functions*.[21] Although the threat of potentially stifling mandatory government technical standards must be avoided, software is increasingly the means by which user interface options and functionalities are implemented; excluding telecommunications software from the definition of CPE would create an accessibility regime that excludes disabled people from "leading-edge" telecommunications services.[22]

Microsoft insists that all software, regardless of functionality, must be excluded from accessibility requirements under Section 255, based on its construction of definitional terms in the 1996 Act.[23] We disagree. First, Microsoft's argument that the inclusion of software in the Act's definition of "telecommunications equipment" implies

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[19] Pacific Telesis Comments at 9.

[20] Indeed, from a consumer perspective, many of the most important "services" available to Internet users, from e-mail to Web browsing to Internet voice telephony, are delivered not by Internet service providers, but rather by a combination of hardware and software on the individual desktop.

[21] AFB Comments at 4, 7; TRACE Comments at 2-5.

[22] *See* TRACE Comments at 2-5.

[23] Microsoft Comments at 10-11.

its exclusion from the definition of CPE is ill-conceived. There is no indication that Congress wanted to permit CPE manufacturers to avoid their Section 255 responsibilities by engineering access functionalities into software (or "firmware")[24] rather than hardware. Moreover, if Congress had wanted to exclude software from classification as CPE, it easily could have said so.[25]

Second, Microsoft's argument that classifying software as CPE "could result in an effort to regulate operating system software"[26] is a red herring. Unless operating system software controls the telecommunications capabilities of personal computers, there is no nexus between a personal computer ("PC") operating system and communications.[27] On the other hand, most multimedia PCs currently available include voicemail software and full duplex speakerphones, and many use software to integrate the functionalities of facsimile machines, telephones and even televisions into the computer.[28] Microsoft's blanket exemption for software is accordingly inconsistent with

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[24] Firmware is software that is built into a computing device, for instance in read-only memory ("ROM") or other types of integrated circuits. The choice of whether to design functionalities into hardware, firmware or software is one made by the manufacturer, generally on the basis of product efficiency, speed and fabrication costs.

[25] The more likely reason for the Act's inclusion of software in the definition of telecommunications equipment was to make clear that the interconnection obligations for local exchange carriers under Section 251 include network elements supported by switch software, as well as hardware. Carriers have specific interconnection obligations with respect to telecommunications equipment under Section 251. The Act also provides that carriers may not install telecommunications equipment that does not comply with the accessibility "guidelines" applicable under Section 255. *See* 47 U.S.C. § 251(a)(2).

[26] Microsoft Comments at 11.

[27] This is the case today, although technology appears to exist that would permit manufacturers of computer operating system software to integrate telecommunications capabilities into the operating system itself. Such a development would suggest a very different result under Section 255 than that proposed by Microsoft.

[28] It is for this reason that the Commission in 1995 concluded that computer facsimile boards and fax modems meet the definition of "facsimile machine" for purposes of Section 227 of the Act, which outlaws unsolicited fax advertisements and requires fax transmissions to include an identifying header. *Rules and Regulations Implementing the Telephone Consumer Protection Act of 1991*, 10 FCC Rcd. 12,391, 12,404-06 (1995).

the actual state of the telecommunications capabilities of PCs today, an ironic fact given its uncritical reliance on "market forces" to address Section 255 concerns.

No one would disagree with Microsoft's point that "[t]he software industry is not now and should not be regulated by the FCC."[29] Nonetheless, it would be short-sighted for the Commission to ignore the effects of technological convergence in implementing Section 255. *Subjecting software to accessibility obligations with respect to its telecommunications functionalities does not imply that the FCC would be regulating the software industry, or imposing mandatory technical standards or general Title II obligations on software manufacturers.* To the contrary, CPE has been detariffed, unbundled and deregulated under the Commission's *Computer II* regime for more than a decade.[30] Except for minimal technical requirements (Parts 15 and 68 of the Commission's rules), and accessibility requirements under Section 255, CPE is and will remain unregulated by the FCC, and state regulation of CPE has long been preempted. Especially because some telecommunications carriers have urged the Commission to improperly classify computer software, such as Internet telephony software, as "telecommunications services" subject to common carrier obligations,[31] software should clearly be classified as CPE in order to maintain its deregulated status.

Requiring that a hardware device must be used "primarily for telecommunications" in order to fall within Section 255, as the Consumer Electronics Manufacturers

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[29] Microsoft Comments at 11.

[30] *See, e.g., Computer and Communications Industry Association. v. FCC,* 693 F.2d 198, 210 (D.C. Cir. 1982), *cert. denied,* 461 U.S. 938 (1983).

[31] *See The Provision of Interstate and International Interexchange Telecommunications Service Via the "Internet" By Non-Tariffed, Uncertificated Entities,* Petition for Declaratory Ruling, Special Relief and Institution of Rulemaking, RM No. 8775 (filed March 4, 1996) ("Petition"); Joint Opposition of Netscape

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Association ("CEMA") argues,[32] is problematic. CEMA correctly observes that *the Internet and other enhanced "information" services are not telecommunications services subject to Section 255.*[33] Netscape concurs with that reasoning, and notes that the Joint Board's recent universal service decision accepted Netscape's position that the Internet is not a telecommunications service for Title II purposes.[34] Nonetheless, as that same decision makes clear, enhanced service providers can offer telecommunications, and are subject to the obligations applicable to telecommunications carriers "to the extent" they actually provide telecommunications services.[35]

Applying this same rationale to CPE, any equipment hardware or software used to offer telecommunications is to be treated as CPE, but only to the extent of its telecommunications capabilities.[36] Thus, for instance, if a television receiver manufactured

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Communications Corporation, Voxware, Inc. and Insoft, Inc., RM No. 8775 (filed May 8, 1996)("Netscape ACTA Opposition") <http://www.technologylaw.com/acta_comm.html>.

[32] CEMA Comments at 4-8.

[33] *Id.* at 5-7. Netscape agrees as a policy matter with CCD Telecom, which points out that information services and telecommunications services are also converging. CCD Telecom Comments at 5. In our comments in the universal service proceeding, for instance, we argued that "the limited model for universal service laid out in the Telecommunications Act of 1996 will need to give way to a new paradigm, in which all communications providers—regardless of regulatory classification—both contribute to and receive support from a 'universal' universal service support system." Netscape Comments, CC Docket No. 96-45, at iii (April 12, 1996).<http://www.technologylaw.com/us_comm.html>. Yet this convergence is not reflected in the 1996 Act, which deals more with the regulatory issues of the last decade than those likely to emerge from the technology of the next decade, and largely codifies the *Computer II* basic/enhanced service dichotomy. Extending Section 255 beyond telecommunications into enhanced services is, therefore, the responsibility of Congress, not the FCC.

[34] Joint Board Recommended Decision ¶¶ 455, 462 (quoting Netscape universal service comments).

[35] *Id.* at ¶ 794. As discussed in the next section of these reply comments, Netscape also believes that Internet access should be universally available and specifically included within the Commission's universal service support mechanism for schools and libraries.

[36] *See, e.g.*, Inclusive Technologies Comments at 2-3 ("Any device performing a telecommunications function should be considered CPE, but should be considered such for that purpose alone."); Consumer Action Network Comments, at 2 ("Equipment that can be used with telecommunications services and which also can be used with services that do not fall within the statutory definition of telecommunications services should be treated the same way as equipment that can only be used with telecommunications services."); MATP Comments at 2 ("[W]here the information appliance has the potential to be used for telecommunications in addition to its other functions, even where the primary

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by a CEMA member offers telephone answering machine or facsimile capabilities, those functionalities should be subject to Section 255. The same is true of a PC and PC software. Whether or not the "primary purpose" of a device is communications, the telecommunications functionalities of hardware and software should be subject to the accessibility requirements of Section 255. The Commission must clearly be sensitive to the need to avoid premature definitional pronouncements in an era in which the scope of telecommunications equipment and services are evolving rapidly, but should endeavor to treat all competing players with a similar set of accessibility policies. If there are cost and marketability consequences to designing accessibility into multi-purpose devices used in part for telecommunications, they can readily be dealt with in application of the 1996 Act's relatively permissive "readily achievable" criterion.

While Internet services[37] are information services under the 1996 Act, and thus not technically subject to Section 255, Netscape is committed to enhancing the accessibility of the Internet to people with disabilities, whether or not specific Internet applications fall under the 1996 Act's rubric of "telecommunications." This is a goal Netscape shares with the broader Internet community, which is actively exploring issues associated with accessibility. The World Wide Web Consortium ("W3C") and the upcoming Sixth International World Wide Web Conference on April 7-11, 1997 will

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purpose of the device is not telecommunications, all functions related to telecommunications should be accessible to the extent readily achievable.").

[37] Internet services combine transport, *i.e.*, dedicated and dial-up connectivity to an Internet router or server, and a variety of value-added applications (e-mail, WWW, etc.) that are provisioned with both client (PC) and server software for information processing, retrieval and protocol conversion. The Internet is thus a hybrid medium which, as the Joint Board noted, relies on telecommunications facilities and services for its underlying connectivity, but is itself an enhanced service. *See* Joint Board Recommended Decision ¶ 462 (quoting Netscape comments); Comments of Netscape Communications Corporation, CC Docket No. 96-45, at 2-3 (filed April 12, 1996) <http://www.technologylaw.com/us_comm.html>.

focus on accessibility for people with disabilities.[38] Indeed, while some of the access barriers facing individuals with disabilities are the result of software design, others—including the important issues of "image map" specifications and the accessibility of Web page content itself—are functions of open Internet standards and the broader community of Web authors that cannot be resolved on a company-specific basis.[39] Netscape invites consumers and disability advocates to participate fully in these ongoing efforts in the Internet community to make the World Wide Web itself more accessible to people with disabilities.

III. UNIVERSAL DESIGN MUST BE EVALUATED IN THE BROADER CONTEXT OF UNIVERSAL SERVICE AND UNIVERSAL INTERNET ACCESS

The Internet and the World Wide Web, while still in their technological infancy as a commercial medium, have already revolutionized the way in which computer users retrieve, share and disseminate information. Entire new industries have sprung up (seemingly overnight), with new employment and profit opportunities, to serve the information needs of individual and corporate customers in this rapidly expanding medium. And to an extent not often appreciated, the growing significance of "electronic commerce"—including digital communications, transactions and information

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[38] The theme for the 6th International WWW Conference <http://www6conf.slac. stanford.edu/> is "Everyone, Everything, Connected." Web Access '97 <http://access.www6conf.org/>, a continuing series of conferences which have examined the state and extent of access to graphical user interfaces for blind and visually impaired computer users, will also be held during the 6th International Conference.

[39] These two accessibility barriers are particularly troubling for people who are blind. Image maps present a graphical-only navigation feature for Web pages, but an alternative "text" tag for client-side image maps is not supported by the current HTML 3.2 specification. Although good Web page design offers text-alternatives for navigation, there nonetheless is no current standard for incorporating into Web pages an "overview" or summary akin to what a sighted person can realize by scanning a Web site prior to reading its content. *See* Pacific Telesis Comments at 7 n.6 (non-communications problems associated with inaccessible Web design and content). Thus, resolution of some Internet accessibility issues will challenge the creativity of Internet engineers in the standards process, as well as in software design.

processing—made possible by the Internet is ideally suited for many people with disabilities, for whom the Internet allows fuller participation in and benefit from economic and cultural affairs despite their physical limitations. The new medium of the Internet is thus helping to eradicate barriers to more conventional ways of human interaction that have frequently limited the inclusion of people with disabilities in important social endeavors.

The world of cyberspace can be one in which limitations are minimized only if universal access to the Internet is available. If people with disabilities are unable to access the Internet, or unable to use Internet applications, they will not be able to take advantage of the economic, educational and social benefits of the Information Superhighway.[40] Only a national and international policy of inclusiveness will make the liberating potential of the Internet a reality for people with disabilities.

Netscape believes that accessibility and universal design are best evaluated as part of a broader policy framework under which the Commission addresses "universality" generally. For instance, there are universal service ramifications to disability access (*e.g.*, service pricing/subsidies and geographic availability) just as there are for the Internet (*e.g.*, K-12 access and the availability of Internet services generally). There are also international issues of disability access (*e.g.*, foreign equipment manufacturing, international standards) just as there are for the Internet (*e.g.*, foreign Internet access pricing, multi-lingual access to the Web). It is clear, therefore, that disability access is one of three pillars of a universal communications infrastructure, in

[40] *See, e.g.*, AFB Comments at 4 ("The ability to use [the evolving information superhighway] is rapidly becoming the new literacy challenge. For people who are blind or visually impaired, the stakes of access to and use of new information technology are enormous.")

which all people, regardless of economic status, physical limitations or geographic location, can participate fully in the global medium of the Internet. Universal service, universal design and universal access are all related, and the Commission's decisions under Section 255 should make clear the linkage between each of these three aspects of universality.

Implementing this three-pronged universality policy in practice requires attention to both the policies underlying Section 255 and the mechanics of the Commission's implementing rules or guidelines. For instance, the NOI inquires whether the FCC should apply accessibility requirements to foreign-manufactured CPE and telecommunications equipment. This question can be answered by looking to the linkage between universal design and universal access. Foreign-manufactured equipment must be covered in order to protect Americans with disabilities, and in order to promote universal design practices abroad as well. Because the markets for telecommunications equipment and CPE are increasingly international, FCC leadership will promote US industry and the interests of all people with disabilities (Americans and others) at the same time. Lack of parity in international disability policies and standards can create handicaps for new entrants, raise costs, deter innovation and chill opportunities for regulatory liberalization, all of which are keys to a global environment hospitable to the continued growth and development of the Internet.

Making the United States the world leader on accessibility issues is therefore consistent with the policies of the 1996 Act, which envision a US telecommunications industry and equipment market that is the world's most competitive, and US telecommunications policies that are emulated, and adopted, by other nations. No less

is true of the Internet itself, where foreign PTT practices too often make access impossibly expensive or just plain impossible.[41] By promoting universal design, universal service and universal access for telecommunications services *and* the Internet, the Commission will advance the interests of people with disabilities in the broader context of a truly "universal," global telecommunications and information system.

IV. PROCESS-ORIENTED COMMISSION GUIDELINES ARE FAR SUPERIOR TO A CASE-BY-CASE APPROACH TO COMPLAINT RESOLUTION

Netscape cannot agree with those commenters who have advocated a case-by-case approach to disposition of accessibility complaints. Nor do we concur with Microsoft's view that the ADA has led to "confusion" and "delay" in achieving accessibility, such that the Commission "should hesitate" before adopting the ADA's definition of "readily achievable."[42] To the contrary, we agree with a wide range of commenters—including NAD, AFB, Pacific Telesis and others—who have urged the Commission to *use process-oriented guidelines* that encourage early identification of accessibility solutions instead of more costly and contentious disputes over retrofitting of inaccessible equipment and services.

A process-oriented approach is beneficial to both manufacturers and consumers. First, manufacturers need guidance on how the FCC will enforce Section 255, since exclusive enforcement jurisdiction resides with the Commission and private lawsuits are not permitted. Yet information technology is changing so rapidly that identification

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[41] *See* Netscape ACTA Opposition, at iv (FCC should "promote the important interest of the Internet and US-based Internet entities in a competitive, deregulated international telecommunications environment").

[42] Microsoft Comments at 21-22.

of highly specific performance-oriented objectives is likely a disproportionately difficult and time-consuming task. As Pacific Telesis comments:

> The need for a process-oriented approach is dictated by the complex interrelationships within the telecommunications network as swell as the rapid pace of technological change within the industry. Rigid service, product or disability specific rules will soon become outmoded and may eventually act to stifle technological innovations that benefit Americans with disabilities.

Pacific Telesis Comments at i.

Moreover, early identification of accessibility issues in the product design process will make the cost of achieving accessibility lower, and reduce the incidence of compliance disputes, far more than an *ad hoc* system of case-by-case adjudication. As NAD observes, accessibility needs can be met most efficiently if the needs of people with disabilities are considered "at all phases of the design, development and marketing of a new service," and process guidelines will "have the beneficial effects of achieving increased compliance and reducing the number of complaints."[43] Retrofitting of telecommunications products and services is by all accounts costly, burdensome and not in the best interests of either manufacturers or consumers.[44]

Furthermore, because product design is a fluid process, occurring over time and frequently with resources from different units of manufacturing companies, process guidelines are needed to give industry guidance on how the Commission will decide Section 255 complaints. As NYNEX comments, "[c]onsumers, manufacturers and service providers would all benefit from the FCC utilizing a known, consistent set of

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[43] NAD Comments at ii.

[44] CCD Telecomm Comments at 4; Motorola Comments at 18.

guidelines."[45] A consistent set of guidelines will provide guidance to industry, help create realistic expectations, avoid false hopes for instant solutions, and deter unrealistic demands on designers, manufacturers and standards-developing organizations.

This does not mean that the Commission needs to promulgate regulations *or* that performance criteria are irrelevant to Section 255. In this regard, Netscape offers the following recommendations, drawn from our limited experience to date on the TAAC.

- The Commission should not promulgate accessibility regulations, but rather use the Access Board's forthcoming "guidelines" as the substantive standards applied in enforcement proceedings under Section 255.[46]
- Manufacturers should enjoy a presumption that if the Access Board's process guidelines are followed in good faith, their universal design decisions are valid, in order to encourage early identification and resolution of accessibility concerns.[47]
- Generic performance guidelines, such as those being developed by the TAAC performance subcommittee, are appropriate to avoid the situation in which universal design processes are followed but invalid or unsubstantiated results reached. These performance guidelines should not specify how to achieve accessibility, should not dictate technical specifications, and should in the longer term be replaced by open, consensus standards developed by industry standards bodies.[48]

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[45] NYNEX Comments at 8.
[46] AFB Comments at 17; MATP Comments at 6; NYNEX Comments at 4. *Cf.* TIA Comments at 3.
[47] Lucent Technologies Comments at 6.
[48] MATP Comments at 5.